

**System and Method for Asymmetric Heterogeneous
Multi-Threaded Operating System**

ABSTRACT

A system and method for an asymmetric heterogeneous multi-threaded operating system are presented. A processing unit (PU) provides a trusted mode environment in which an operating system executes. A heterogeneous processor environment includes a synergistic processing unit (SPU) that does not provide trusted mode capabilities. The PU operating system uses two separate and distinct schedulers which are a PU scheduler and an SPU scheduler to schedule tasks on a PU and an SPU, respectively. In one embodiment, the heterogeneous processor environment includes a plurality of SPUs. In this embodiment, the SPU scheduler may use a single SPU run queue to schedule tasks for the plurality of SPUs or, the SPU scheduler may use a plurality of run queues to schedule SPU tasks whereby each of the run queues correspond to a particular SPU.